Jordan University of Science and Technology

Faculty of Science & Arts

Biotechnology & Genetic Engineering Department

HSS103BT General Biology - JNQF Level: 7

First Semester 2024-2025

Course Catalog
3 Credit Hours. General Biology (BT104) is devoted to the study of the cellular and molecular basis of life. Students are expected to develop an understanding of certain core concepts of biology including cell structure and physiology, information flow, metabolism, cellular reproduction, Mendelian genetics, mammalian systems & protective mechanisms. All course materials: Course Outline, PPTs, Exam ADDs and course announcements are posted on E-learning site (https://elearn.just.edu.jo) inside the HSS103BT-GENERAL BIOLOGY (All Sections) icon.
Teaching Method: On Campus

Text Book	
Title	Biology A Global Approach
Author(s)	Campell NA, Urry LA, Cain ML, Wasserman SA, Minorsky PV and Orr RB
Edition	12th Edition
Short Name	Text Book
Other Information	Pearson Education Limited, UK.

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Class Schedule & Room

Section 1:
Lecture Time: Sun, Tue, Thu : 08:30 - 09:30
Room: SB19

Section 2:
Lecture Time: Sun, Tue, Thu : 09:30 - 10:30
Room: مدرج عرار

Section 3:
Lecture Time: Sun, Tue, Thu : 10:30 - 11:30
Room: مدرج عرار

Section 4:
Lecture Time: Sun, Tue, Thu : 13:30 - 14:30
Room: مدرج عرار

Section 5:
Lecture Time: Mon, Wed : 08:30 - 10:00
Room: مدرج عرار

Section 6:
Lecture Time: Mon, Wed : 11:30 - 13:00
Room: مدرج عرار

Section 7:
Lecture Time: Mon, Wed : 13:00 - 14:30
Room: SB19

Section 8:
Lecture Time: Mon, Wed : 10:00 - 11:30
Room: SB13

Tentative List of Topics Covered		
Weeks	**Topic**	**References**
Weeks 1, 2	Biological Macromolecules and Lipids: All Concepts	**Chapter 5** From **Text Book**
Weeks 2, 3	Cell Structure and Function : All Concepts	**Chapter 7** From **Text Book**
Week 4	Cell Membranes: All Concepts	**Chapter 8** From **Text Book**
Week 5	Cellular Respiration: Concepts 10.1, 10.2, 10.3, 10.4 & 10.5	**Chapter 10** From **Text Book**
Week 6	Mitosis: All Concepts	**Chapter 12** From **Text Book**
Week 7	Sexual Life Cycles and Meiosis: All Concepts	**Chapter 13** From **Text Book**

Week 8	Mendelian Genetics: Concepts 14.1, 14.2 & 14.3	**Chapter 14** From **Text Book**
Week 9	Nucleic Acids and Inheritance: Concepts 16.1 & 16.2	**Chapter 16** From **Text Book**
Week 10	Animal Digestive Systems (Mammalian): Concepts 42.3 & 42.5	**Chapter 42** From **Text Book**
Weeks 11, 12	Animal Transport Systems [Mammalian]: Concepts 43.2, 43.3, 43.4, 43.5 (Lungs only), 43.6 (How mammal breathes only) & 43.7 (Adaptation)	**Chapter 43** From **Text Book**
Weeks 13, 14	Animal Defenses Against Infection: Concepts 47.1, 47.2 & 47.3	**Chapter 47** From **Text Book**

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method
Describe the structure, characteristics and functions of carbohydrates, lipids, proteins and nucleic acids. [1SLO1] [1L7K1, 1L7S2]	10%	First Exam
Become familiar with basic unit of life, how prokaryotes and eukaryotes are different and identify organelles and structures in animal and plant cells and how they differ from each other. [1SLO1] [1L7K1, 1L7S2]	10%	First Exam
Analyze and explain the processes associated with and the role of the cell membrane in the processes of osmosis, diffusion and transport. [1SLO1] [1L7K1, 1L7S1, 1L7S2]	10%	First Exam
Explain how metabolic pathways are performed in plants and animals in the form of cellular respiration. [1SLO1] [1L7K1, 1L7S1, 1L7S2]	10%	Second Exam
Describe the molecular bases of cell cycle and how mitosis and meiosis are differentiated in addition to their goals and outcomes. [1SLO1] [1L7K1, 1L7S1, 1L7S2]	20%	Second Exam
Define and apply the principles of Mendelian genetics and its modern extensions to the unity and diversity of life [1SLO1] [1L7K1, 1L7S1]	15%	Final Exam
Understand the molecular and chromosomal basis of heredity [1SLO1] [1L7K1, 1L7S2]	10%	Final Exam
Describe the anatomical structure and physiological functions of tissues and organ systems of the human body [1SLO1] [1L7K1, 1L7S2]	15%	Final Exam

Relationship to Program Student Outcomes (Out of 100%)					
SLO1	SLO2	SLO3	SLO4	SLO5	SLO6
100					

Relationship to NQF Outcomes (Out of 100%)		
L7K1	L7S1	L7S2
43.33	20.83	35.83

Evaluation	
Assessment Tool	**Weight**
First Exam	30%
Second Exam	30%
Final Exam	40%

Policy	
course policies and grade information	Grades and exams information 1- The course final grade will be based on the First (30%), Second (30%) and Final (40%) exams. 2- All exams are computer-based comprising of multiple-choice questions. 3- Some of the exam questions are based on figures and images. 4- All exams will be administered according to the University's exam schedule. 5- All exam questions will be based on information found in the textbook. E-learning The course is partially supported by E-learning, a web-based program that enables you to access PowerPoint slides and course announcements. All course materials: Course Outline, PPTs, Exam ADDs and course announcements are posted on E-learning site (https://elearn.just.edu.jo) inside the HSS103BT-GENERAL BIOLOGY (All Sections) icon. Course policies 1. Your class attendance is mandatory. Exceeding 20% absences of the total lecture hours will lead to your removal from the course with a failing grade. 2. Attendance registration will be conducted at the end of each lecture. The instructor will display a QR code that can be scanned using your cellphone or tablet. Please ensure that your cellphone or tablet is functioning properly and that you have internet access to log into your student services. 3. Make-up exam appeals should be filed within two days of the missed exam. 4. Cell phones are prohibited during examinations and must be turned off during lecture. No incoming or outgoing calls or text messages are allowed. 5. Unethical conduct, including cheating during examinations, will result in punishment by the university administration. 6. Switching between the course sections is not permitted
Evaluation	Assessment Type Weight (%) First Exam (TBD) 30 Second Exam (TBD) 30 Final Exam (TBD) 40 Total 100

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